

# Health of King County 2006

## *Chapter 4: Maternal & Infant Health*

**Infant Mortality**

**Low Birth Weight**

**Very Low Birth Weight**

**Preterm Delivery**

**Late or No Prenatal Care**

**Maternal Smoking**

**Adolescent Birth**



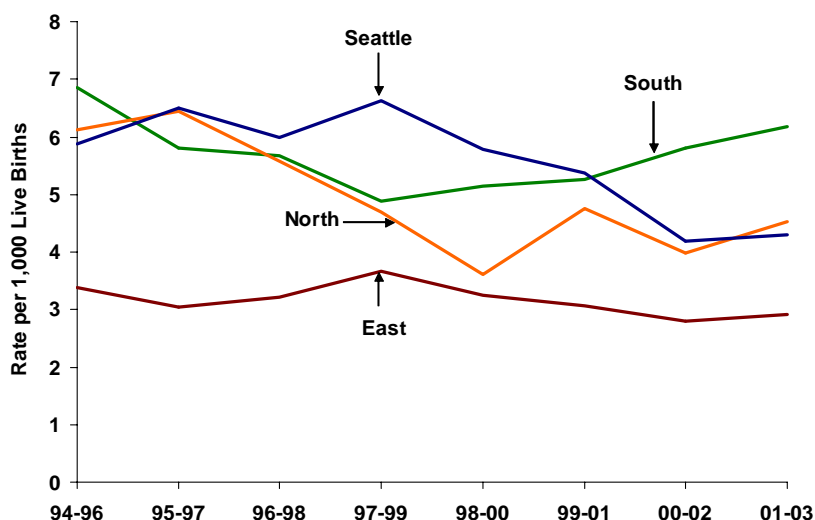
# Infant Mortality

- The infant mortality rate is an indicator of the overall health of a community. It is influenced by many factors, including the health of mothers and infants, the capacity and quality of the health care system, mother's income and education, and numerous aspects of the neighborhoods in which families live.
- In King County, the infant mortality rate has declined fairly steadily since 1981. In 2004, the rate was 4.4 per 1,000 live births (see [Public Health Core Indicators for Seattle and King County](#) for more information about Infant Mortality). This meets the Healthy People 2010 goal of 4.5 deaths per 1,000 live births.
- Despite this decline, significant disparities by race/ethnicity remain and may be getting larger. From 1995-2004, the rate declined only for whites and African Americans. Wide disparities also remain by poverty and Health Planning Area (see [Racial Disparities in Infant Mortality](#) for more information).
- In 1999-2001, South Region replaced Seattle with the highest rates.
- In comparison to 15 major metropolitan U.S. counties, King County had the 11<sup>th</sup> lowest rate of infant mortality.
- Because of late-breaking data from the Washington State Department of Health, trends in total infant mortality and infant mortality by race are updated with 2004 data. All other analyses include data up to 2003.

## King County and Regions

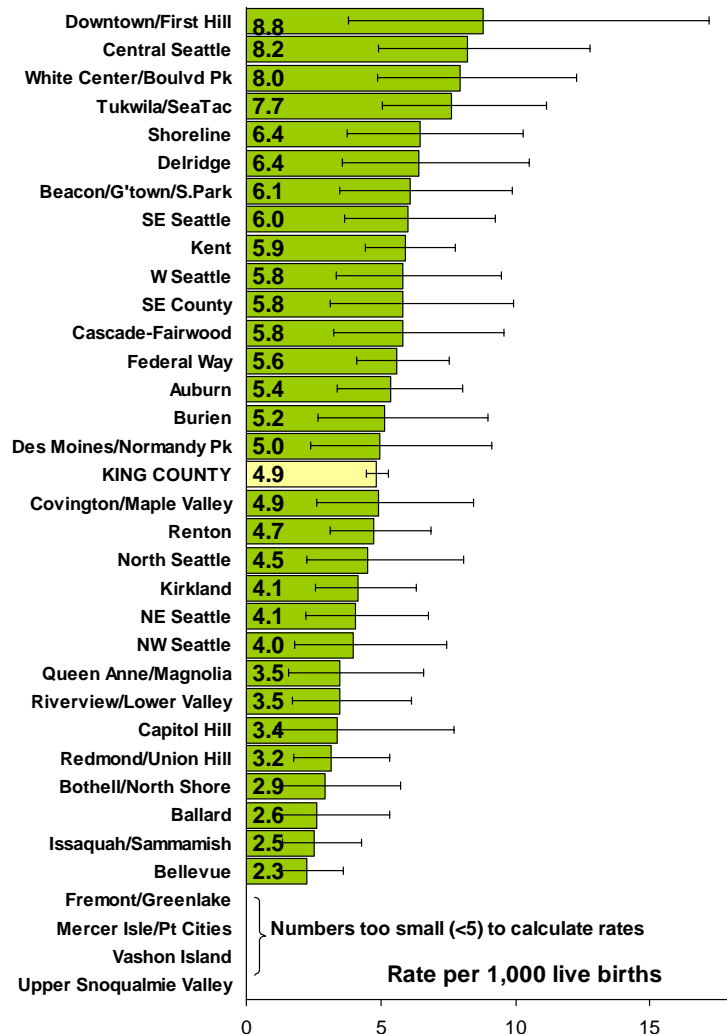
- In King County, the infant mortality rate has declined fairly steadily since 1981. In 2004, the rate was 4.4 per 1,000 live births, the lowest rate on record. There were 101 infant deaths in 2004, the second lowest number on record.
- South Region has not shared in the decline experienced by Seattle. In the most recent time period, 2001-2003, South Region had a significantly higher rate of infant mortality than East Region. Although higher, the infant mortality rate for South Region was not significantly different than the rates for Seattle and North Region.
- East Region has consistently had the lowest rates over that time period.

**Infant Mortality by Region, King County,  
3-Year Rolling Averages, 1994-2003**



Data Source: Washington State Department of Health, Center for Health Statistics, Linked birth-infant death files.  
Produced by: Public Health - Seattle & King County, Epidemiology, Planning & Evaluation

### Infant Mortality Rates by Health Planning Area, King County, 1999 - 2003 Combined



Data Source: Washington State Department of Health, Center for Health Statistics, linked birth-infant death files for 1980-2003.  
Produced by: Epidemiology, Planning & Evaluation, Public Health - Seattle & King County

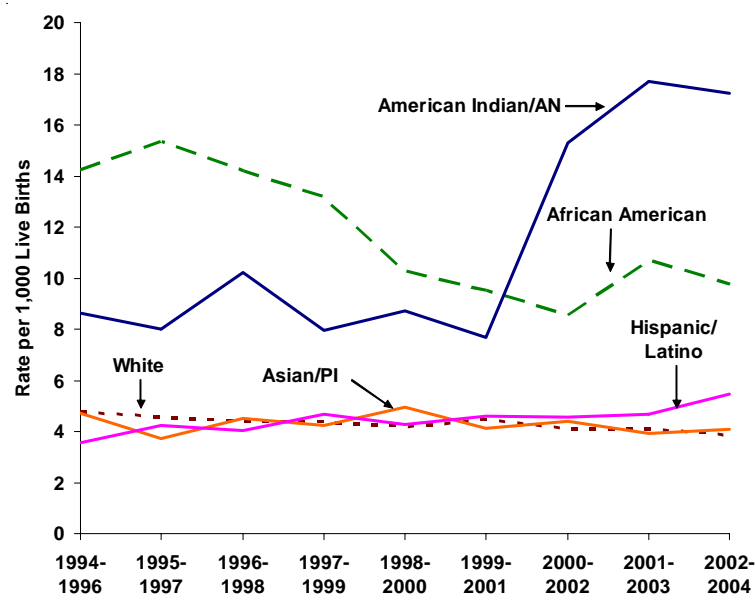
### Patterns by Health Planning Area

- Small numbers within the different Health Planning Areas make it difficult to analyze differences between Health Planning Areas. However, Downtown Seattle/First Hill, Central Seattle, White Center/Boulevard Park, and Tukwila/Sea Tac Health Planning Areas tend to have the highest rates of infant death in King County.
- The lowest rates of infant death tend to be in Bellevue and Issaquah/Sammamish Health Planning Areas.
- There were too few infant deaths (fewer than five deaths from 1999-2003) in Fremont/Greenlake, Upper Snoqualmie Valley, Mercer and Vashon Islands to allow rates to be calculated for those Health Planning Areas.

## Focus on Disparities

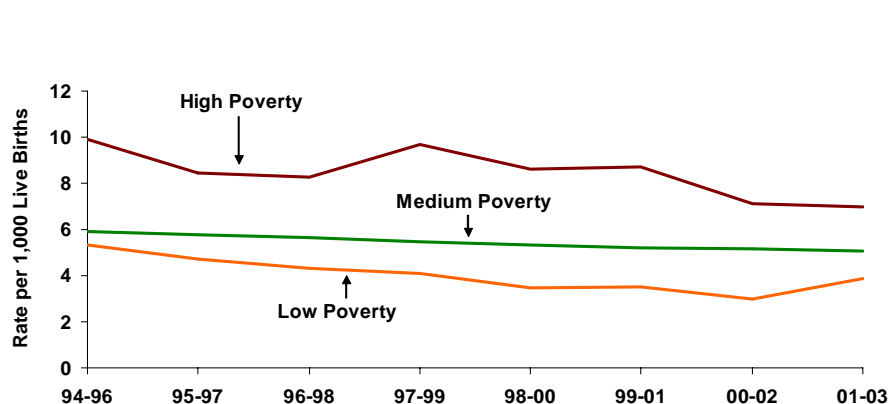
- From 1995 through 2004, infant mortality rates declined for whites and African Americans, and did not decline for other groups.
- Infant death rates remain substantially higher for African Americans and American Indian/Alaska Natives compared to whites.
- The 2002-2004 African American infant mortality rate (9.0/1000) was more than two times higher than that for whites (4.0/1000). The American Indian/Alaska Native infant mortality rate (14.7/1000) was over three times higher than that for whites.
- The direction of the trend over time for American Indian/Alaska Native infants is difficult to interpret because of the relatively small number of American Indian births and infant deaths. Nevertheless, the rate is of great concern and bears close monitoring given that the three-year rate from 2001-2003 is higher than all other periods since the early 1990s.

**Infant Mortality by Race/Ethnicity, King County, 3-Year Rolling Averages, 1994-2004**



Data Source: Washington State Department of Health, Center for Human Statistics. Linked birth-infant death files.  
Produced by: Public Health - Seattle & King County, Epidemiology, Planning & Evaluation

**Infant Mortality by Poverty, King County, 3-Year Rolling Average, 1994-2003**



Data Source: Washington State Department of Health, Center for Human Statistics. Linked birth-infant death files.  
Produced by: Public Health - Seattle & King County, Epidemiology, Planning & Evaluation

- High poverty neighborhoods have consistently had significantly higher rates of infant death than low poverty neighborhoods.
- From 1994-2003, infant death rates declined significantly only in low poverty neighborhoods.
- The only age group to experience significant declines in infant mortality from 1994-2003 were women 25 to 39 years of age (data not shown).

## References

- Mathews, T.J., Menacker, F., MacDorman MF. Infant mortality statistics from the 2001 period linked birth/infant death data set. National vital statistics reports; Vol. 52, No. 2. Hyattsville, Maryland: National Center for Health Statistics. 2003
- Centers for Disease Control and Prevention; MMWR, 2002; 51: 589-592.

# Low Birth Weight

**(Infants weighing less than 2500 grams [5 ½ pounds] at birth)**

The weight of an infant at the time of birth is an important predictor of infant survival. Low birth weight (LBW) babies have a greater risk of dying in their first year of life.<sup>1</sup> In addition, they are more likely to have health problems throughout their lives.<sup>2,3</sup>

The birth weight of an infant is considered to be a reliable indicator of fetal maturity. As an indicator, it represents many factors, including characteristics inherent in the fetus and the mother which may be environmentally, hormonally or genetically determined.<sup>4</sup>

Over the last ten years, the LBW rate in King County has increased significantly and at 6.3% for 2003, remains above the Healthy People 2010 goal of 5%. (see [Public Health Core Indicators for Seattle and King County](#) for more information about LBW). However, the LBW increase is mainly due to an increase in the proportion of multiple births, which are more likely to be LBW.

The overall increase in the rate of LBW is probably largely attributable to an increase in the use of assisted reproductive technologies which often result in multiple births.

In comparison to 15 major metropolitan U.S. counties, King County has the 13th lowest rate of LBW.

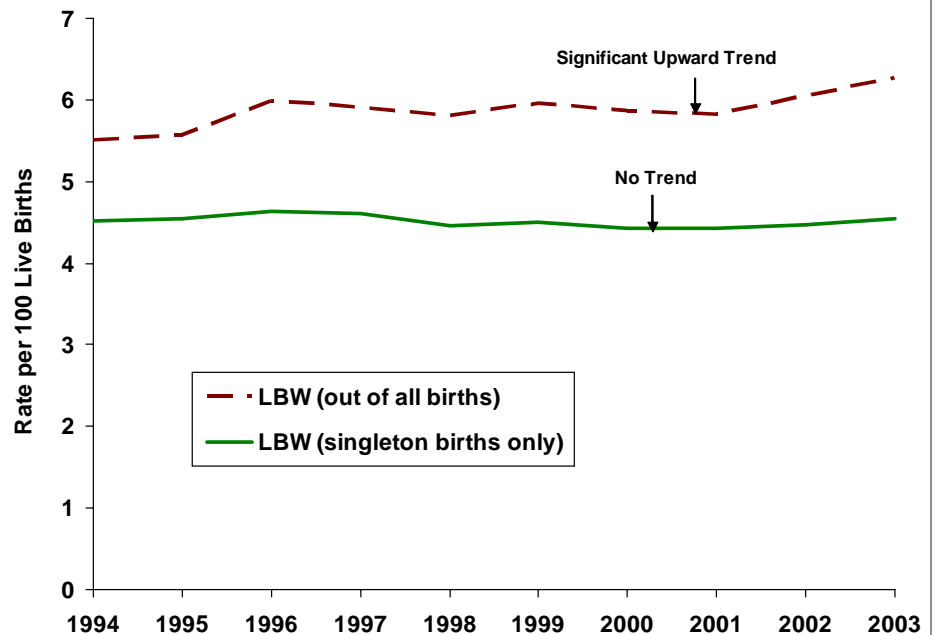
While the rates of LBW no longer vary by neighborhood poverty level it is important to not interpret this information as an indication that health disparities by poverty have been eliminated. The health implications for a LBW infant are dependent on the factors that contributed to the infant being born small. For example, twins, though more likely to be LBW, fare much better than singleton LBW infants; LBW does vary by neighborhood poverty level for singleton births.

African American women in King County are twice as likely to have a LBW infant and American Indian/Alaska Native and Asian/Pacific Islander women still have significantly higher rates of LBW compared to white and Latina/Hispanic women.

## King County and Regions

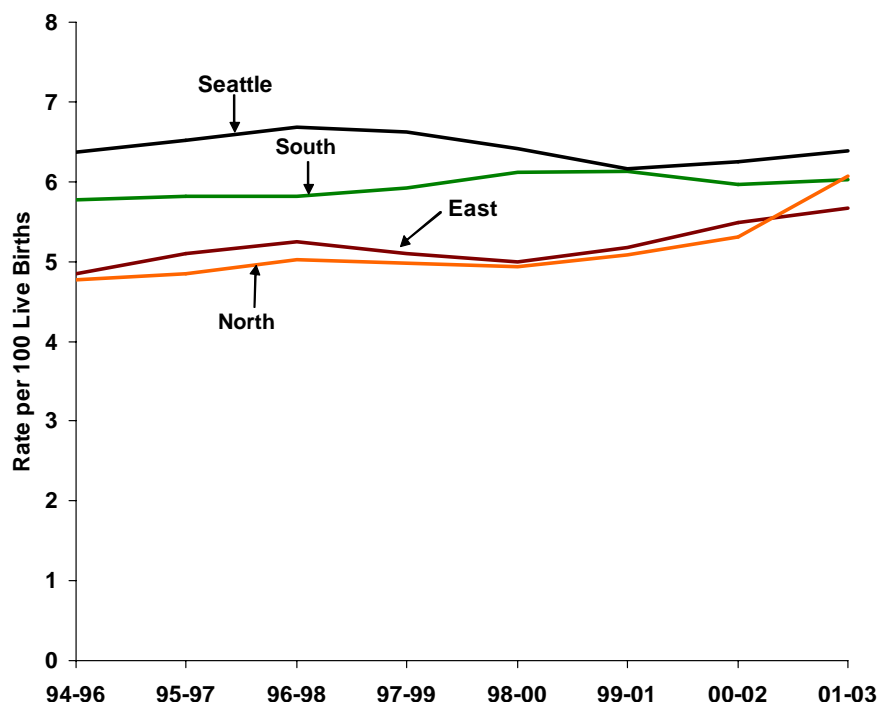
- Low birth weight in King County increased from 1994 to 2003. In 2003, 6.3% of live births were low birth weight.
- The LBW increase was due to an increase in the proportion of multiple births, which tend to be low birth weight. There was no increase in LBW in singleton births.

Low Birth Weight out of All Births and Singleton Births Only, King County, 1994-2003



Data Source: Washington State Department of Health, Center for Health Statistics  
Produced by: Epidemiology, Planning & Evaluation, Public Health - Seattle & King County

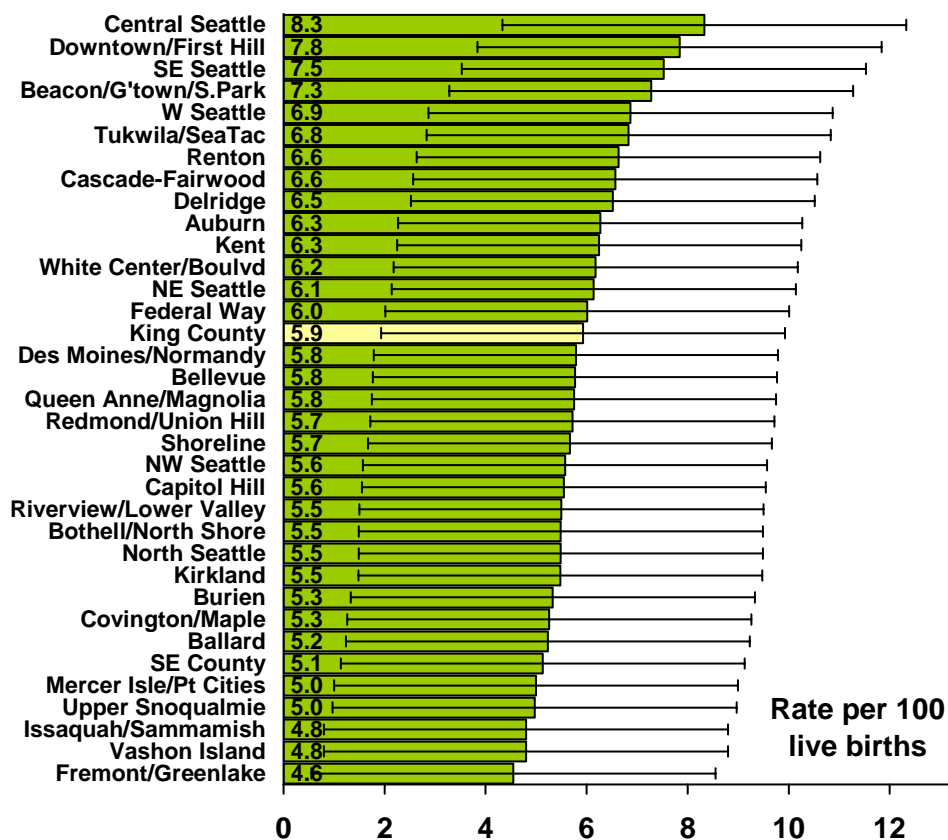
Low Birth Weight Rate by Region, King County, Three Year Rolling Averages, 1994-2003



Data Source: Washington State Department of Health, Center for Health Statistics, Birth Certificate Data  
Produced by: Public Health - Seattle & King County, Epidemiology, Planning & Evaluation, 4/23/2005

- From 1994 to 2003, a significant increase in rates of low birth weight occurred in the East, North and South Regions of King County while Seattle showed no significant change in the rate of low birth weight.
- East Region had a significantly lower rate of low birth weight from 1999-2003 than Seattle or the South Region.

### Low Birth Weight Rates by Health Planning Area, King County King County, 1999-2003 Combined



Data Source: Washington State Department of Health, Center for Health Statistics, Birth Certificate  
Produced by: Public Health - Seattle & King County, Epidemiology, Planning & Evaluation

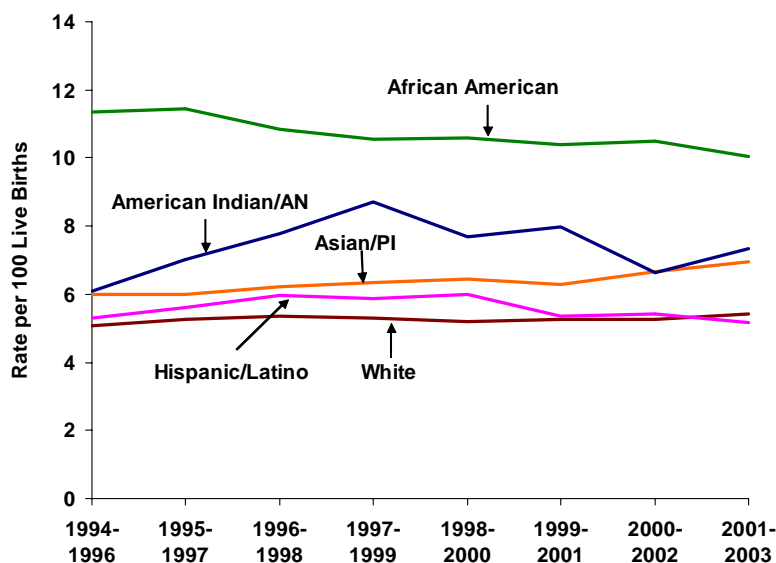
### Patterns by Health Planning Area

- Small numbers within the different Health Planning Areas result in overlapping confidence intervals. However, Central Seattle, Beacon Hill/Georgetown/South Park, and White Center/Boulevard Park Health Planning Areas tend to have the highest rates of low birth weight in King County.
- The lowest rates of low birth weight in King County were in the Fremont/Greenlake and Issaquah/Sammamish Health Planning areas.

### Focus on Disparities

- Low birth weight rates have remained significantly higher for African Americans compared to other racial/ethnic groups.
- From 1994-2003, low birth weight rates increased significantly for whites and Asian/Pacific Islanders. The reason for the increase in the rate of low birth weight among whites and Asian/Pacific Islanders is thought to be a reflection of more multiple births among these groups as a result of the increased use of assisted reproductive technologies. There was no significant trend for whites or Asian/Pacific Islanders in rates of low birth weight among singleton births (data not shown).
- All other race/ethnic groups showed no significant change in rates of low birth weight from 1994 to 2003.

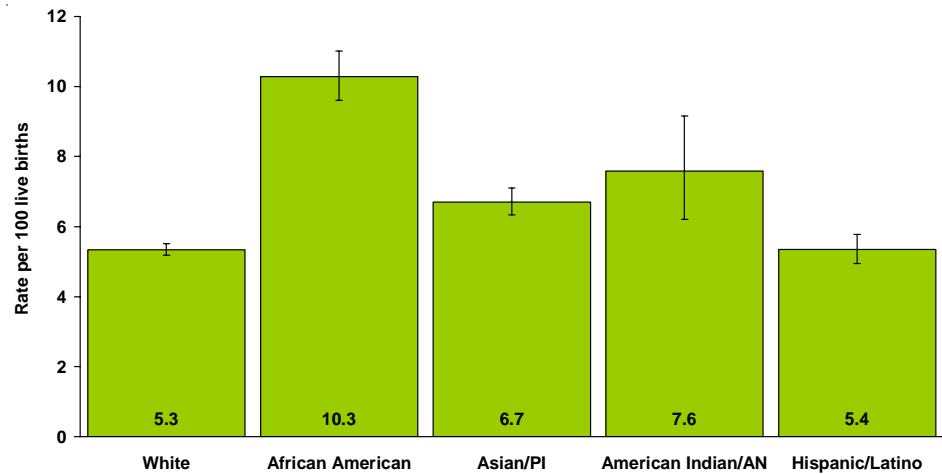
### Low Birth Weight Rate by Race/Ethnicity, King County, 3-Year Rolling Averages, 1994-2003



Data Source: Washington State Department of Health, Center for Health Statistics, Birth Certificate Data  
Produced by: Public Health - Seattle & King County, Epidemiology, Planning & Evaluation

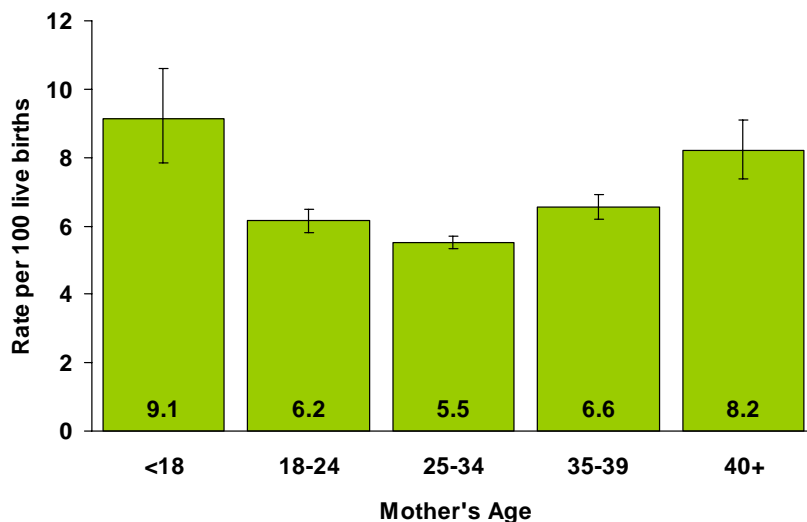
- From 1999-2003 rates of low birth weight were significantly higher for African Americans, American Indian/Alaska Natives and Asian/Pacific Islanders compared to those for whites and Hispanic/Latinos. African American infants were approximately twice as likely to be low birth weight compared to white or Hispanic/Latino infants. American Indian/Alaska Native low birth weight rates were approximately 43% higher, and Asian/Pacific Islanders were approximately 25% higher than low birth weight rates for whites and Hispanic/Latinos.

**Low Birth Weight Rates By Race/Ethnicity, King County, 1999 - 2003 Combined**



Data Source: Washington State Department of Health, Center for Health Statistics, Birth Certificate Data  
Produced by: Public Health - Seattle & King County, Epidemiology, Planning & Evaluation

**Low Birth Weight Rates, By Age of Mother, King County, 1999 - 2003 Combined**



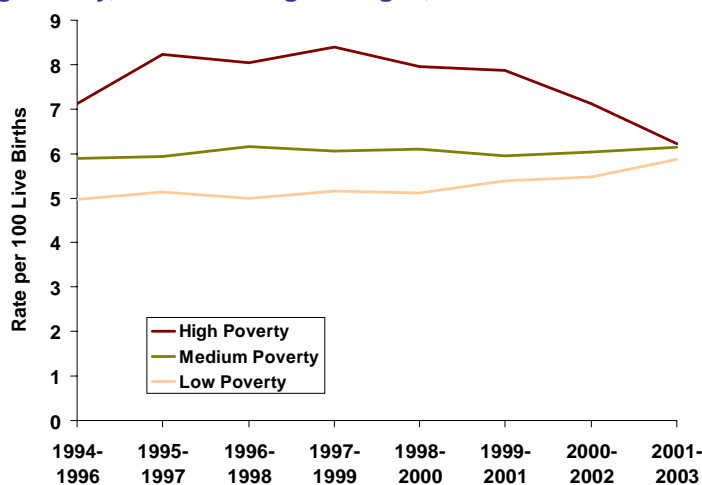
Data Source: Washington State Department of Health, Center for Health Statistics, Birth Certificate Data  
Produced by: Public Health - Seattle & King County, Epidemiology, Planning & Evaluation

- Mothers less than 18 years of age and 40 years or older had significantly higher rates of low birth weight compared to women between the ages of 18 and 39. Mothers 25-34 years of age had the lowest rates of low birth weight.



- In past years, high poverty neighborhoods consistently had significantly higher rates of low birth weight than low poverty neighborhoods.
- From 1994-2003, low birth weight rates increased significantly in low poverty neighborhoods and in the past 5 years, from 1999-2003, low birth weight rates declined significantly in high poverty neighborhoods. This has resulted in no significant difference in rates of low birth weight by neighborhood poverty level.

**Low Birth Weight Rates by Neighborhood Poverty Level, King County, 3-Year Rolling Averages, 1994-2003**



Data Source: Washington State Department of Health, Center for Health Statistics, Birth Certificate Data  
Produced by: Public Health - Seattle & King County, Epidemiology, Planning & Evaluation

## References

- <sup>1</sup> Office for National Statistics. *Mortality statistics: childhood, infant and perinatal, series DH3, no.32*. London: The Stationery Office, 1999.
- <sup>2</sup> Bernstein IM, Horbar JD, Badger GJ, *et al*. Morbidity and mortality among very-low-birth-weight neonates with intrauterine growth restriction. *Am J Obstet Gynecol* 2000;182:198-206. [\[Medline\]](#)
- <sup>3</sup> Murphy D, Sellers S, MacKenzie I, *et al*. Case-control study of antenatal and intrapartum risk factors for cerebral palsy in very preterm singleton babies. *Lancet* 1995;346:1449-54. [\[Medline\]](#)
- <sup>4</sup> Centers for Disease Control and Prevention, American Society for Reproductive Medicine, Society for Assisted Reproductive Technology, RESOLVE. 1998 Assisted reproductive technology success rates: national summary and fertility clinic reports, Atlanta: Centers for Disease Control and Prevention, 2000.
- <sup>5</sup> Contribution of assisted reproductive technology and ovulation-inducing drugs to triplet and higher-order multiple births — United States, 1980-1997. *MMWR Morb Mortal Wkly Rep* 2000;49:535-538. [\[Medline\]](#)
- <sup>6</sup> Martin JA, Park MM. Trends in twin and triplet births: 1980-97. *National vital statistics reports*. Vol. 47. No. 24. Hyattsville, Md.: National Center for Health Statistics, 1999.

# Very Low Birth Weight

**(Infants weighing less than 1500 grams [3 pounds 4 ounces] at birth)**

The chance for survival increases as birth weight increases. Therefore, infants born at a very low birth weight (VLBW) have the lowest survival rates. VLBW infants are approximately 100 times more likely to die by age one than are infants of normal birth weight.

VLBW infants who survive are at a significantly increased risk of physical and visual difficulties, developmental delays and cognitive impairment requiring increased levels of medical, educational and parental care.<sup>1</sup>

In 2003, King County's very low birth weight (VLBW) rate was 1.0 per 100 live births, which was similar to the Healthy People 2010 Objective of 0.9 per 100 live births. 217 infants were born VLBW.

As with LBW, overall VLBW rates increased from 1994 to 2003, but trends were flat for singleton births, suggesting that increased use of assisted reproductive technologies is an important factor in the increase.

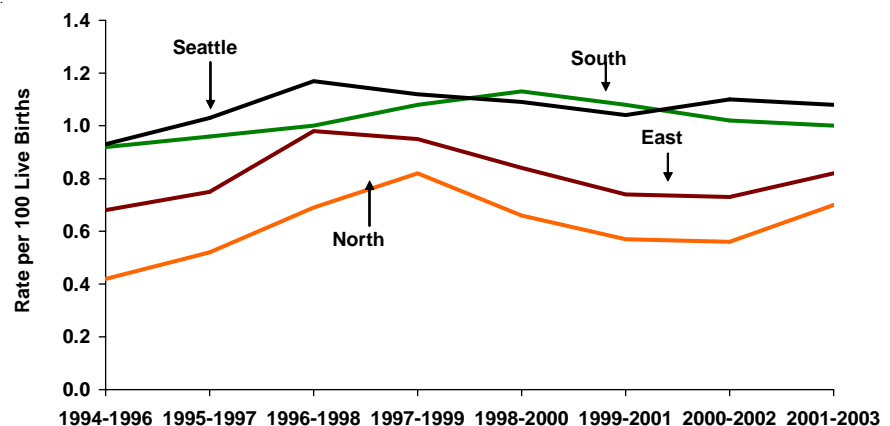
Disparities by race/ethnicity and neighborhood poverty level are substantial. VLBW rates in American Indian/Alaska Natives are twice the rate seen in whites, and African American rates are almost three times the white rate.

VLBW in South Region and Seattle exceed those seen in East and North Regions ( see [Public Health Core Indicators Seattle and King County](#) for more information about VLBW).

## King County and Regions

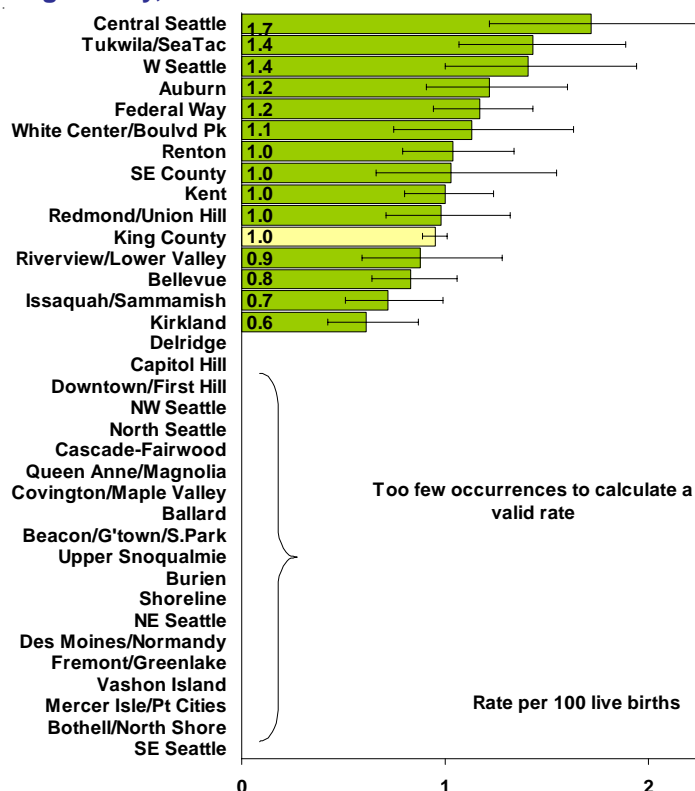
- In 2003, 217 infants were born very low birth weight (VLBW), for a rate of 1 VLBW infant for every 100 live births.
- Like LBW trends, VLBW in all births increased from 1994 to 2003 but was flat for singleton births (data not shown).
- From 1994 to 2003, rates of VLBW have been consistently higher in Seattle and the South Regions of King County in comparison to the East and North Regions of King County.
- The King County rate of 1.0 VLBW births per 100 live births is similar to the Healthy People 2010 goal of 0.9 VLBW births per 100 live births.

**Very Low Birth Weight Rate by Region, King County, Three Year Rolling Averages, 1994-2003**



Data Source: Washington State Department of Health, Center for Health Statistics, Birth Certificate Data  
Produced by: Public Health - Seattle & King County, Epidemiology, Planning & Evaluation

### Very Low Birth Weight Rates By Health Planning Area, King County, 1999 - 2003 Combined



Data Source: Washington State Department of Health, Office of Maternal and Child Health, Center for Health Statistics, Birth Certificate Data

Produced by: Public Health - Seattle & King County, Epidemiology, Planning & Evaluation

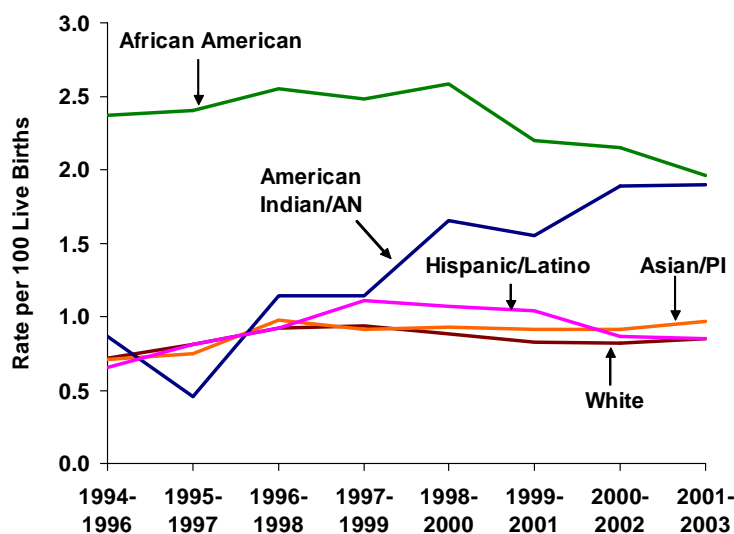
### Patterns by Health Planning Area

- Small numbers within the different Health Planning Areas result in overlapping confidence intervals. However, the Central Seattle and Tukwila/SeaTac Health Planning Areas had the highest rates of VLBW in King County.
- The lowest rates of VLBW in King County were in the Kirkland and Issaquah/Sammamish Health Planning areas.

### Focus on Disparities

- Over the last decade, VLBW rates have consistently been significantly higher for African Americans compared to whites.
- From 1994-2003, VLBW rates increased significantly for Asian/Pacific Islanders. All other race/ethnic groups showed no significant change in rates of low birth weight from 1994 to 2003.
- However, the rate of VLBW for American Indian/Alaska Native infants from 1994 to 2003 appears to have steadily increased although this upward trend was not statistically significant.

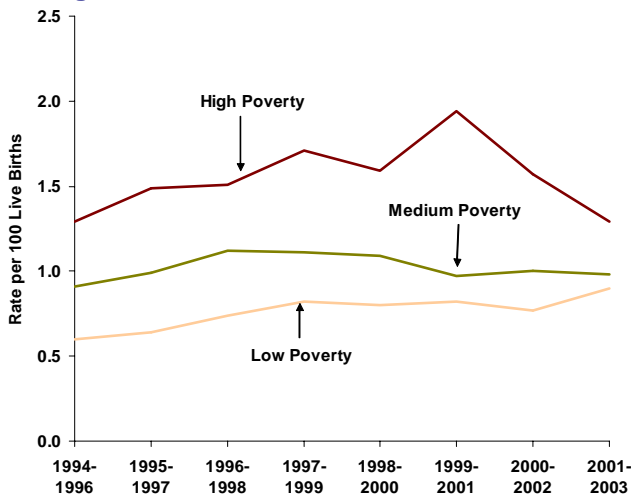
### Very Low Birth Weight Rate by Race/Ethnicity, King County, 3-Year Rolling Averages, 1994-2003



Data Source: Washington State Department of Health, Center for Health Statistics, Birth Certificate Data  
Produced by: Public Health - Seattle & King County, Epidemiology, Planning & Evaluation

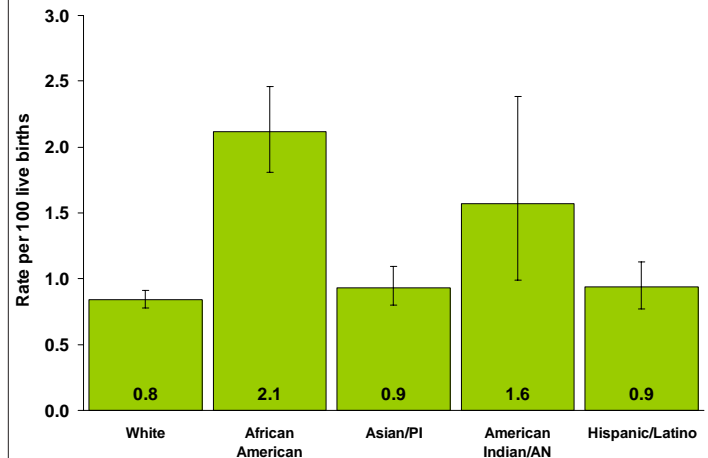
- From 1999-2003, the rate of VLBW for American Indian/Alaska Natives was twice the rate for whites and the difference was statistically significant. African American infants were almost three times the rate for whites during this time period. These differences are larger when the analysis is restricted to singleton births (data not shown).
- Mothers 40 years or older had significantly higher rates of VLBW compared to women between the ages of 18 and 39.

**Very Low Birth Weight Rates by Neighborhood Poverty Level, King County, 3-Year Rolling Averages, 1994-2003**



Data Source: Washington State Department of Health, Center for Health Statistics, Birth Certificate Data  
Produced by: Public Health - Seattle & King County, Epidemiology, Planning & Evaluation

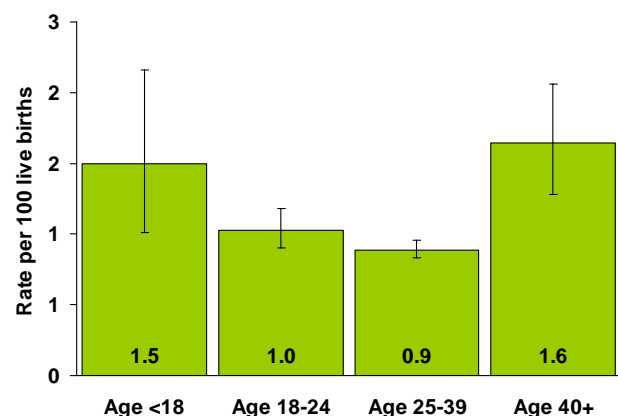
**Very Low Birth Weight Rates By Race/Ethnicity, King County, 1999 - 2003 Combined**



Data Source: Washington State Department of Health, Center for Health Statistics, Birth Certificate Data  
Produced by: Public Health - Seattle & King County, Epidemiology, Planning & Evaluation

- Over the last decade, high poverty neighborhoods consistently had significantly higher rates of VLBW than low poverty neighborhoods.
- From 1994-2003, rates of VLBW in low poverty neighborhoods have significantly increased.
- In the past 5 years, from 1999-2003, rates of VLBW have significantly decreased in high poverty neighborhoods.

**Very Low Birth Weight Rates, By Age of Mother, King County, 1999 - 2003 Combined**



Data Source: Washington State Department of Health, Center for Health Statistics, Birth Certificate Data  
Produced by: Public Health - Seattle & King County, Epidemiology, Planning & Evaluation

#### References

<sup>1</sup> U.S. Department of Health and Human Services, Health Resources and Services Administration, Maternal and Child Health Bureau. *Child Health USA 2004*. Rockville, Maryland: U.S. Department of Health and Human Services, 2004.

# Preterm Delivery\*

**(A live birth prior to 37 completed weeks of gestation)**

Most pregnancies last approximately 40 weeks. About 12% of babies nationwide are born preterm or before 37 completed weeks of pregnancy.<sup>1</sup>

Preterm delivery is a leading cause of infant death and the leading cause of death in the first month of life.<sup>1,2</sup> All preterm infants are at risk for serious health problems, but most of the serious illness and death is concentrated in the 1 to 2 percent of infants who are born at less than 32 weeks of gestation and who weigh less than 1500 grams.<sup>3</sup>

The costs associated with a preterm delivery are considerable and continue to be higher throughout the child's lifetime due to increased long-term health problems and chronic conditions. At the time of birth, direct health care costs to employers for a premature baby have been estimated to cost \$41,610 —15 times higher than the \$2,830 for a healthy, full-term delivery.<sup>4</sup>

In 2002, 12.8% or 2,784 births in King County were preterm which is well above the Healthy People 2010 goal of 7.6%. (see [Public Health Core Indicators Seattle and King County](#) for more information).

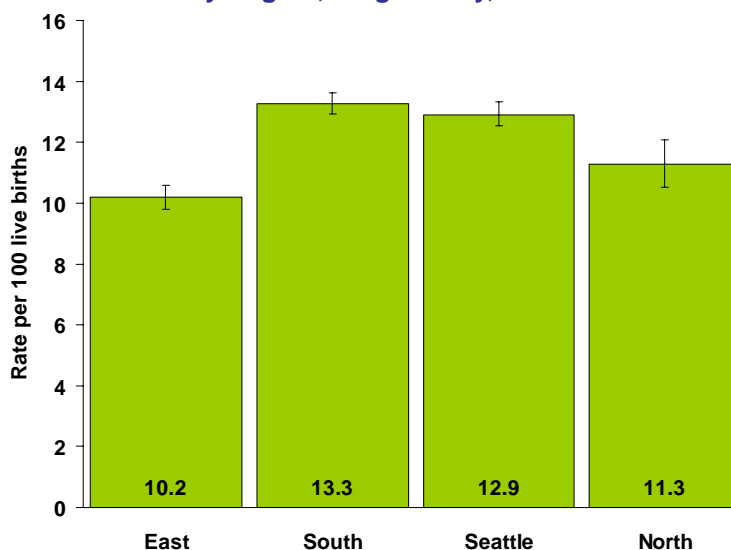
In comparison to 15 major metropolitan U.S. counties, King County had the 7th highest rate of preterm birth.

Every racial/ethnic group in King County had significantly higher rates of preterm delivery in comparison to whites. The highest rates of preterm delivery were seen among African American and American Indian/Alaska Native mothers. Although white women experienced the lowest rate of preterm birth, they still exceed the Healthy People 2010 goals.

## King County and Regions

- From 1999-2003, rates of preterm birth were significantly higher in Seattle and the South Region compared to rates in the East and North Regions of King County.
- In 2003, 1,992 births were preterm, for a rate of 9.0%. Trends are not reported because of a change in the method for calculating gestational age, starting in 2003.

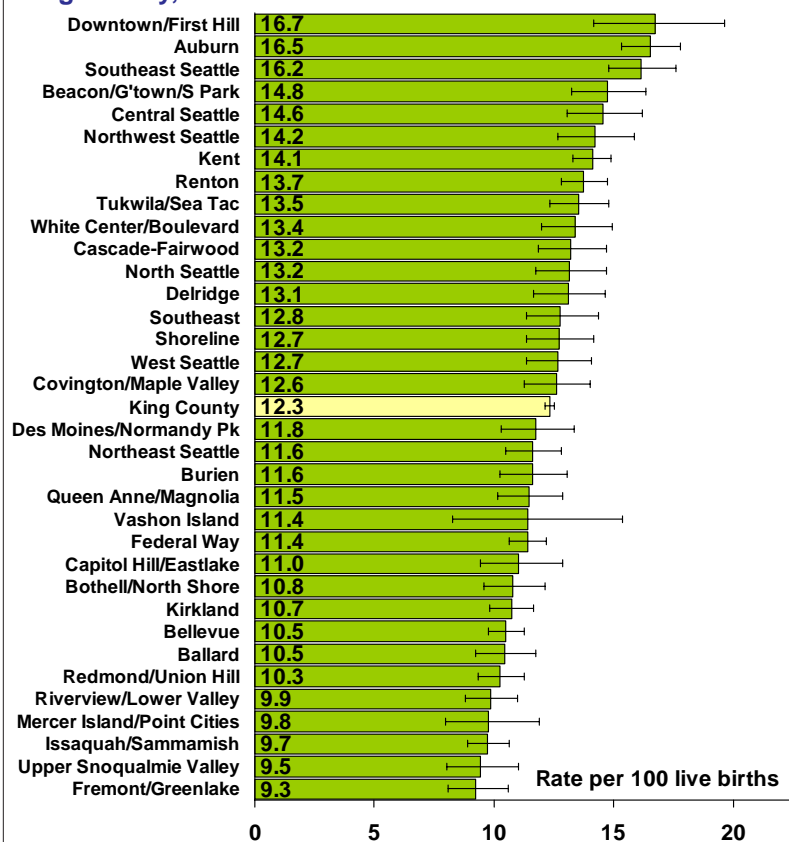
Preterm Birth Rates by Region, King County, 1999-2003 Combined



Data Source: Washington State Department of Health, Center for Health Statistics, Birth Certificate Data  
Produced by: Public Health - Seattle & King County, Epidemiology, Planning & Evaluation

\* The way preterm delivery is calculated from statistical files was recently modified by the Washington State Department of Health. The new calculations apply to past and current years, but were released too late to be incorporated in this report. When this section is updated it is expected that these figures will change.

### Preterm Birth Rates by Health Planning Area, King County, 1999 - 2003 Combined



Data Source: Washington State Department of Health, Center for Health Statistics, Birth Certificate Data  
Washington State Sub-County Population Estimates for Public Health, October 2004  
Produced by: Public Health - Seattle & King County, Epidemiology, Planning & Evaluation

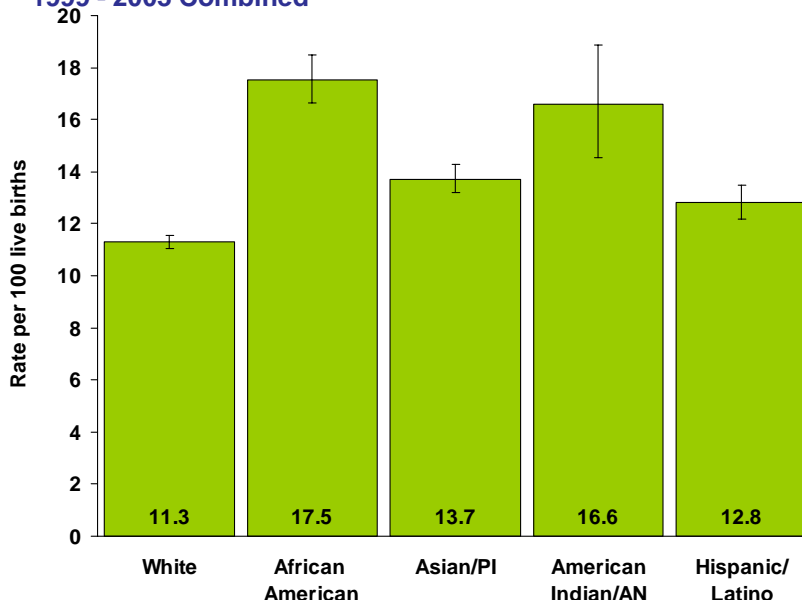
### Patterns by Health Planning Area

- Small numbers within the different Health Planning Areas result in overlapping confidence intervals. However, Downtown/First Hill, Auburn, Southeast Seattle, Beacon Hill/Georgetown/South Park, Central Seattle, Northwest Seattle and Kent had the highest rates of preterm birth in King County.
- The lowest rates of preterm birth in King County were in the Kirkland, Bellevue, Ballard, Redmond/Union Hill, Riverview/Lower Valley, Mercer Island/Point Cities, Upper Snoqualmie Valley, Fremont/Greenlake and Issaquah/Sammamish Health Planning areas.

### Focus on Disparities

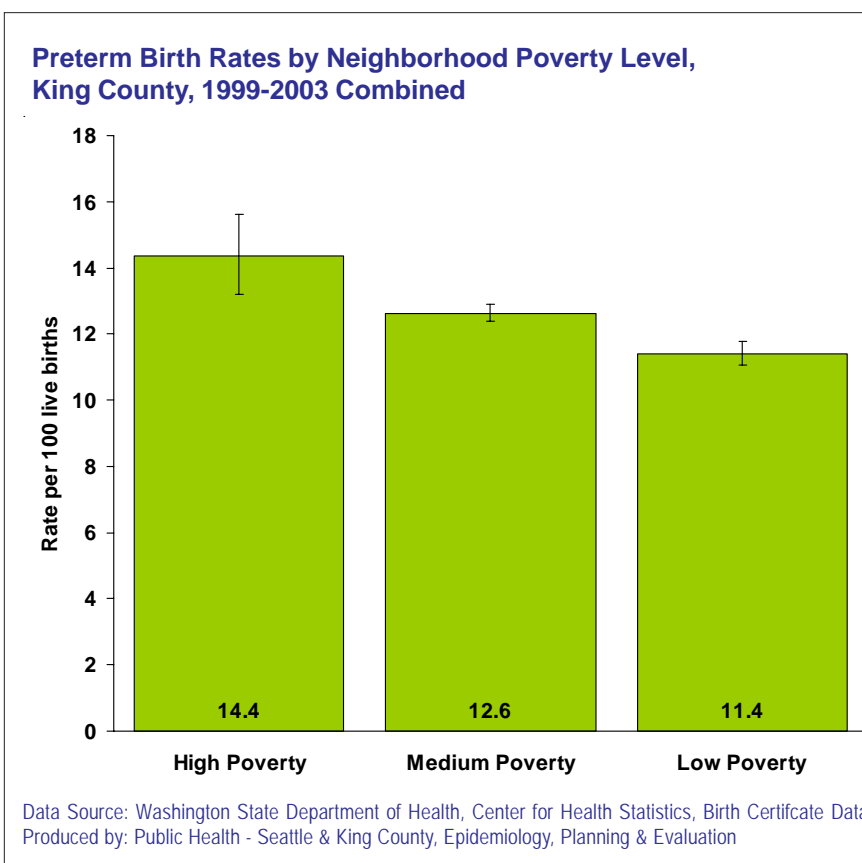
- From 1999-2003 the highest rates of preterm birth were among African Americans (17.5%) and American Indian/Alaska Natives (16.6%) compared to other racial/ethnic groups.
- During that same time period, 1999-2003, the rate of preterm birth for Asian/Pacific Islanders (13.7%) and Hispanic/Latinos (12.8%) was significantly higher than the rate for whites (11.3%).

### Preterm Birth Rates By Race/Ethnicity, King County, 1999 - 2003 Combined



Data Source: Washington State Department of Health, Center for Health Statistics, Birth Certificate Data  
Produced by: Public Health - Seattle & King County, Epidemiology, Planning & Evaluation

- There is a significant relationship between neighborhood poverty level and the rate of preterm delivery. From 1999 to 2003, the lowest rates of preterm delivery were seen in the low poverty neighborhoods. The high poverty neighborhoods had significantly higher rates of preterm birth in comparison to medium and low poverty neighborhoods.



#### References

- Martin JA, Hamilton BE, Sutton PD, et al. Births: Final data for 2003. National vital statistics reports; vol 54 no 2. Hyattsville, MD: National Center for Health Statistics. 2005.
- Anderson RN, Smith BL. Deaths: Leading causes for 2002. National vital statistics reports; vol 53 no 17. Hyattsville, Maryland: National Center for Health Statistics. 2005.
- Goldenberg RL, Hauth JC, Andrews WW. Intrauterine Infection and Preterm Delivery. NEJM 2000;342:1500-7.
- March of Dimes website. Costs of Prematurity. [http://www.marchofdimes.com/prematurity/15341\\_15349.asp](http://www.marchofdimes.com/prematurity/15341_15349.asp)

# Late or No Prenatal Care

(Care beginning in the third trimester of pregnancy or no prenatal care at all during pregnancy)

Getting early and regular prenatal care is one of the best ways to promote a healthy pregnancy.

Prenatal care includes medical care provided to a pregnant woman to prevent complications and decrease the incidence of maternal and prenatal mortality. Prenatal care is more than just medical health care; it often includes education and counseling about how to handle different aspects of pregnancy, such as nutrition and physical activity, what to expect from the birth itself, and basic skills for caring for an infant.<sup>1,2</sup>

In 2002, 2.3% of women giving birth received late or no prenatal care, including 236 live births. (Data are not reported for the period after 2002 because of reliability problems.) King County had the 11th highest rate of 15 major metropolitan U.S. counties.

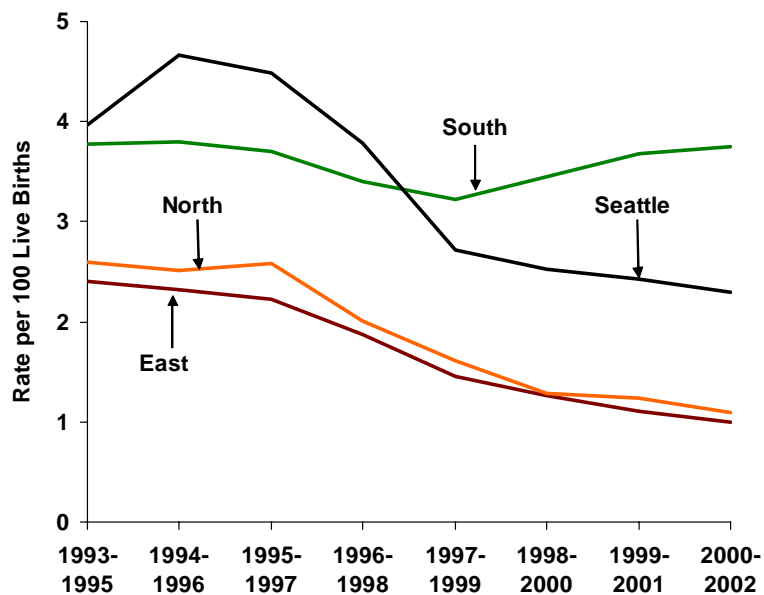
Significant disparities persist, with Latinas/Hispanics, African Americans, American Indian/Alaska Natives and Asian/Pacific Islanders have significantly higher rates than whites.

Disparities are also seen by poverty level of neighborhood, geographic region and Health Planning Area.

## King County and Regions

- In 2002, 2.3% of women giving birth (including 236 births) received late or no prenatal care. There was a significant decline in King County from 1993, when the rate was 3.4%.
- From 1993 to 2002, there were significant declines in Seattle, East and North Regions of King County in the percentage of women giving birth who had received late or no prenatal care. South Region had no significant change from 1993 to 2002 in the percentage of women who received late or no prenatal care.
- The highest percentages of births with late or no prenatal care were consistently in Seattle and South Region.

Late or No Prenatal Care Rate by Region, King County, Three Year Rolling Averages, 1993- 2002

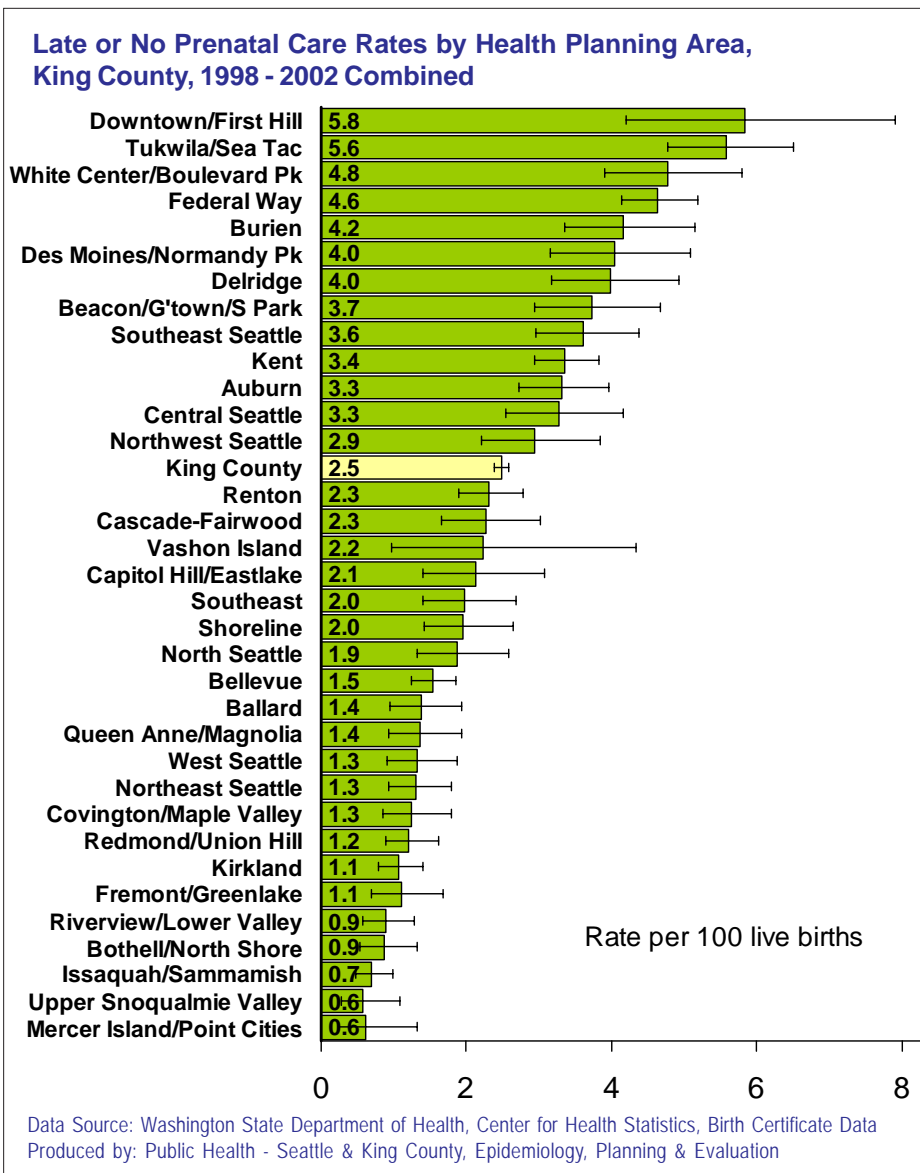


Data Source: Washington State Department of Health, Center for Health Statistics, Birth Certificate Data  
Produced by: Public Health - Seattle & King County, Epidemiology, Planning & Evaluation



## Patterns by Health Planning Area

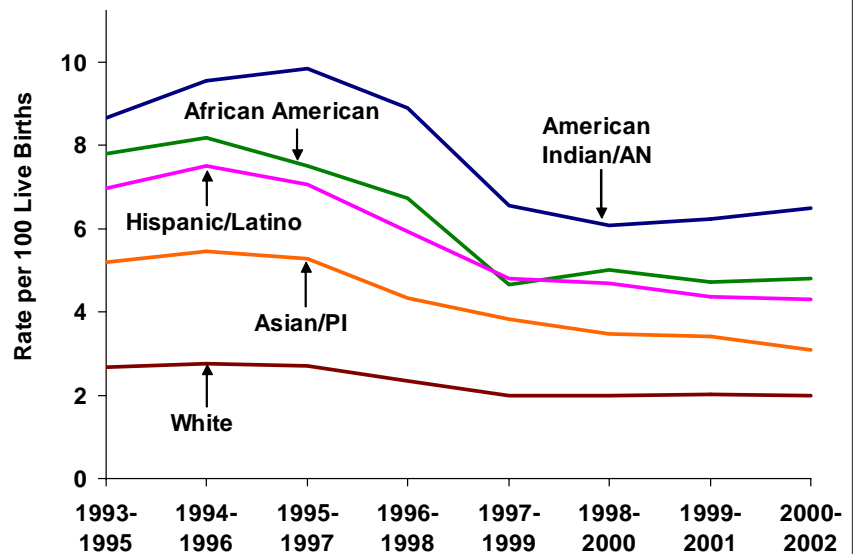
- Small numbers within the different Health Planning Areas result in overlapping confidence intervals. However, the Downtown/First Hill, Tukwila/SeaTac, White Center/Boulevard Park, Federal Way, Burien, Des Moines/Normandy Park, Delridge, Beacon Hill/S Park, Southeast Seattle, Kent and Auburn Health Planning Areas had the highest rates of late or no prenatal care in King County.
- The lowest rates of late or no prenatal care in King County were in the Bellevue, Ballard, Queen Anne/Magnolia, West Seattle, Northeast Seattle, Covington/Maple Valley, Redmond/Union Hill, Kirkland, Fremont/Greenlake, Riverview/Lower Valley, Bothell/North Shore, Issaquah/Sammamish, Upper Snoqualmie Valley, and Mercer Island/Point Cities Health Planning Areas.



## Focus on Disparities

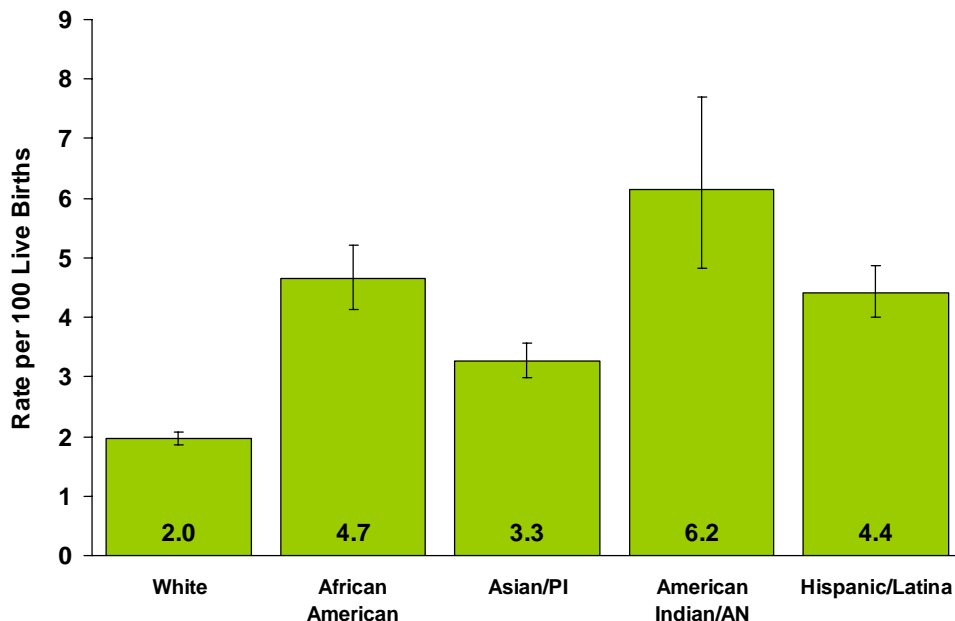
- Over the last decade, from 1993-2002, for all race/ethnic groups, there have been significant declines in the percentage of women that received late or no prenatal care.

**Late or No Prenatal Care Rate by Race/Ethnicity, King County, 3-Year Rolling Averages, 1993-2002**



Data Source: Washington State Department of Health, Center for Health Statistics, Birth Certificate Data  
Produced by: Public Health - Seattle & King County, Epidemiology, Planning & Evaluation

**Late or No Prenatal Care Rates, By Race/Ethnicity, King County, 1998 - 2002 Combined**

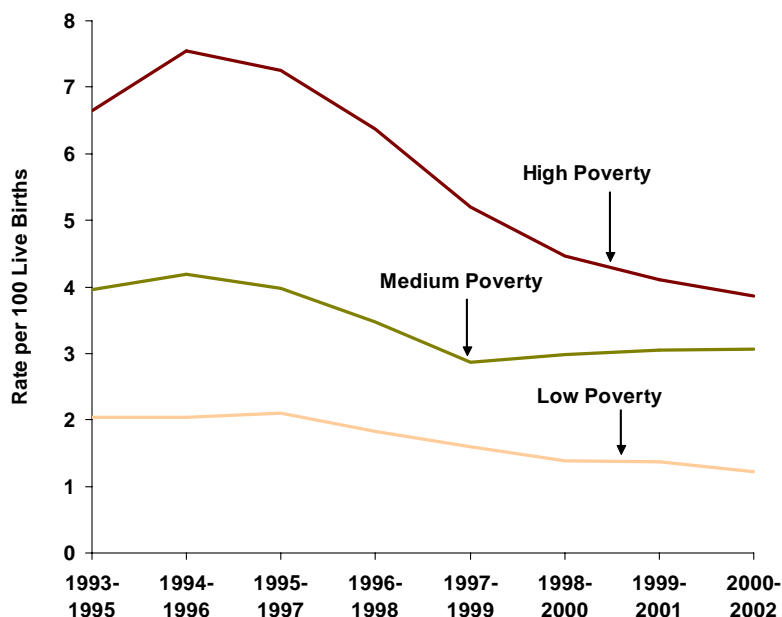


Data Source: Washington State Department of Health, Center for Health  
Produced by: Public Health - Seattle & King County, Epidemiology, Planning & Evaluation, Birth Certificate Data

- Despite these dramatic declines, significant disparities persist. American Indian/Alaska Native mothers are three times as likely, African Americans and Hispanic/Latinas twice as likely, and Asian/Pacific Islanders one and a half times more likely to have received late or no prenatal care compared to white mothers.

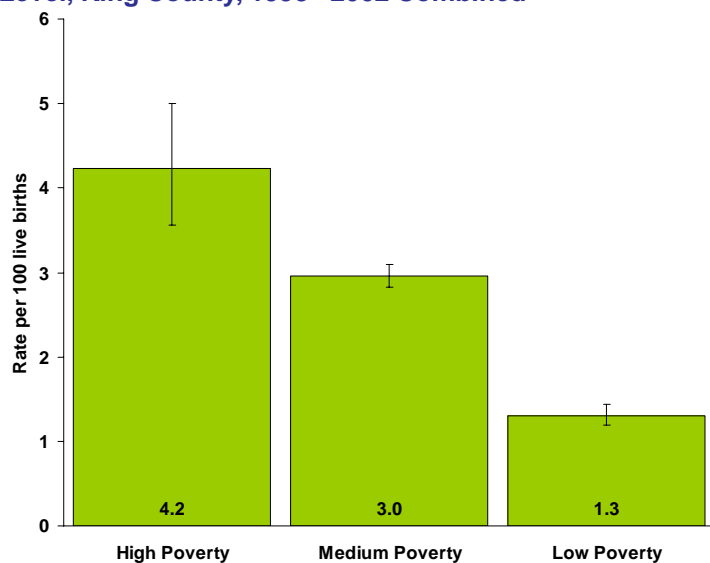
- From 1993-2002, there have been statistically significant declines within each of the three different levels of neighborhood poverty in the percentages of pregnant women receiving late or no prenatal care.
- Over the last decade, high poverty neighborhoods consistently have had significantly higher rates of late or no prenatal care than low poverty neighborhoods. From 1998-2002, the percentage of pregnant women in high poverty neighborhoods receiving late or no prenatal care was over three times that of low poverty neighborhoods. Medium poverty neighborhoods had a rate of late or no prenatal care that was more than twice that of low poverty neighborhoods.

**Late or No Prenatal Care Rates by Neighborhood Poverty Level, King County, 3-Year Rolling Averages, 1993-2002**



Data Source: Washington State Department of Health, Center for Health Statistics, Birth Certificate Data  
Produced by: Public Health - Seattle & King County, Epidemiology, Planning & Evaluation

**Late or No Prenatal Care Rates by Neighborhood Poverty Level, King County, 1998 - 2002 Combined**



Data Source: Washington State Department of Health, Center for Health Statistics, Birth Certificate Data  
Produced by: Public Health - Seattle & King County, Epidemiology, Planning & Evaluation

#### References

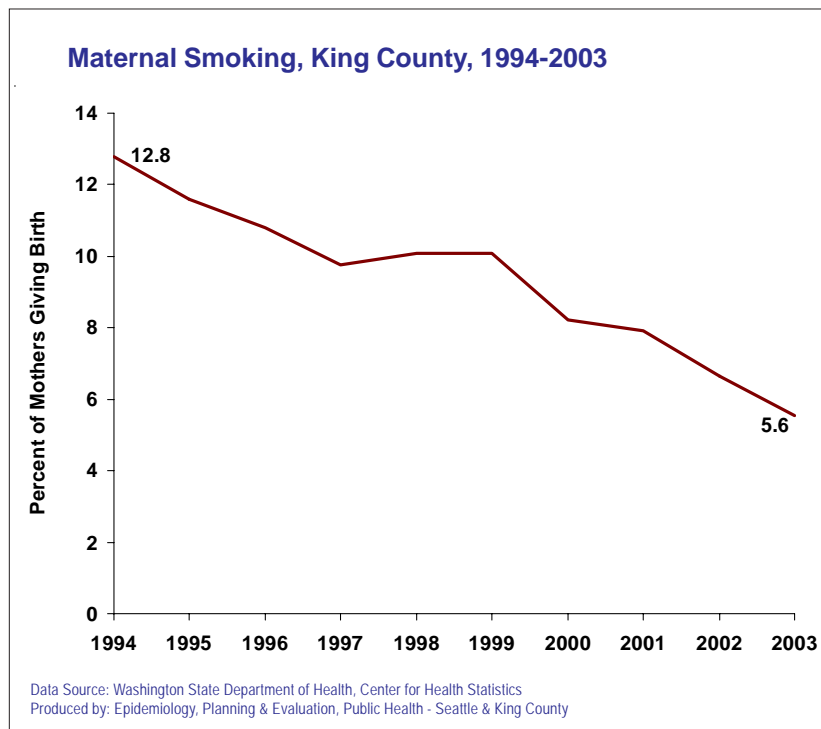
- National Center for Health Statistics Health, United States, 2004. With Chartbook on Trends in the Health of Americans. Hyattsville, Maryland: 2004. <http://www.cdc.gov/nchs/data/hs/hs04trend.pdf#006>
- National Institutes of Health, National Institute of Child Health and Human Development. Care Before and During Pregnancy—Prenatal Care, [http://www.nichd.nih.gov/about/womenhealth/prenatal\\_care.cfm](http://www.nichd.nih.gov/about/womenhealth/prenatal_care.cfm)

# Maternal Smoking

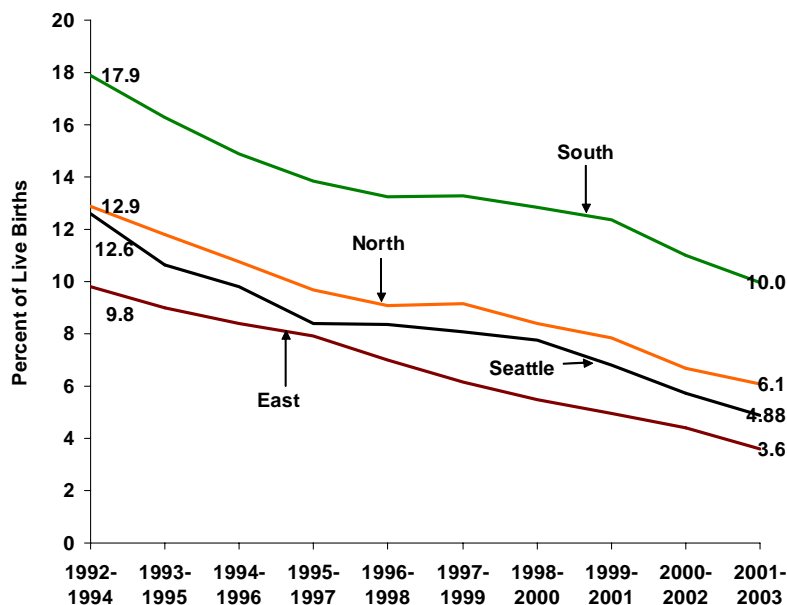
- Smoking during pregnancy is the single most preventable cause of death among mothers and infants.<sup>1</sup> It increases the risk of low birth weight, infant respiratory problems, birth complications and preterm delivery. Smoking is also the major cause of lung cancer and causes a host of other serious diseases.
- Maternal smoking in King County decreased sharply in the last 10 years. In 2003, 5.6% of mothers (1,215 women) giving birth here smoked during pregnancy.
- Despite the sharp decline, the King County rate exceeds the Healthy People 2010 objective of 1% maternal smoking.
- Declines were also seen in all four regions, in all race/ethnic groups and in high, medium and low poverty neighborhoods. However, since 1994, South County lost ground relative to other regions, while other regional disparities, and gaps by race and poverty remained as wide as they were 10 years ago.

## King County and Regions

- From 1994 to 2003, maternal smoking in King County declined by more than half, to 5.6% of live births.



### Maternal Smoking by Region, King County, 1992-2003



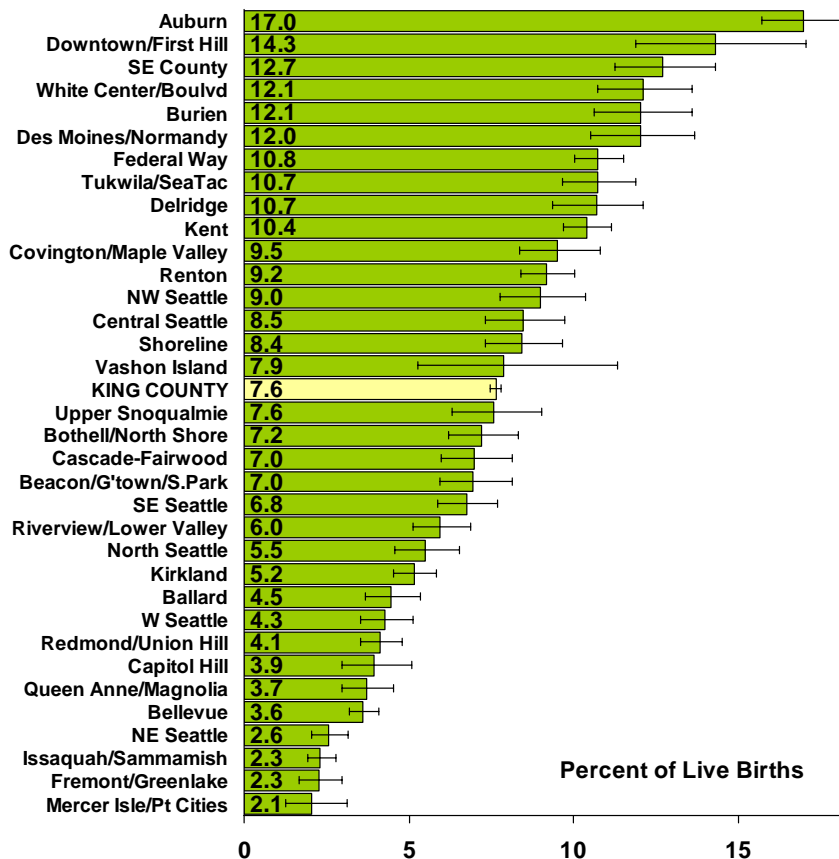
Data Source: Washington State Department of Health, Center for Health Statistics  
Produced by: Epidemiology, Planning & Evaluation, Public Health - Seattle & King County

- Maternal smoking went down steadily in all regions. However, South County declined less sharply than the other regions. Specifically, by 2001-2003, East Region maternal smoking rates had fallen 62% since 1992-1994, while South Region rates fell only 44% during this period. Thus, the 1992 South County rate was 1.8 times the East County rate, but in 2001-2003 the disparity had grown to 2.8 times.
- South County's share of 60% of the total number of maternal smoking births (an average of 841 per year from 2001-2003 in South County) is the largest of any region. (South County had only 40% of the total number of live births during this period.)

### Patterns by Health Planning Area

- In the chart on the right, all Health Planning Areas from Auburn to Renton had rates above the King County average, while all HPAs from Riverview/Lower Valley to Mercer Island/Point Cities had rates below the county average. Auburn's rate was over eight times the rate in Mercer Island/Point Cities.

### Maternal Smoking by Health Planning Area, King County, 5-year Average, 1999-2003

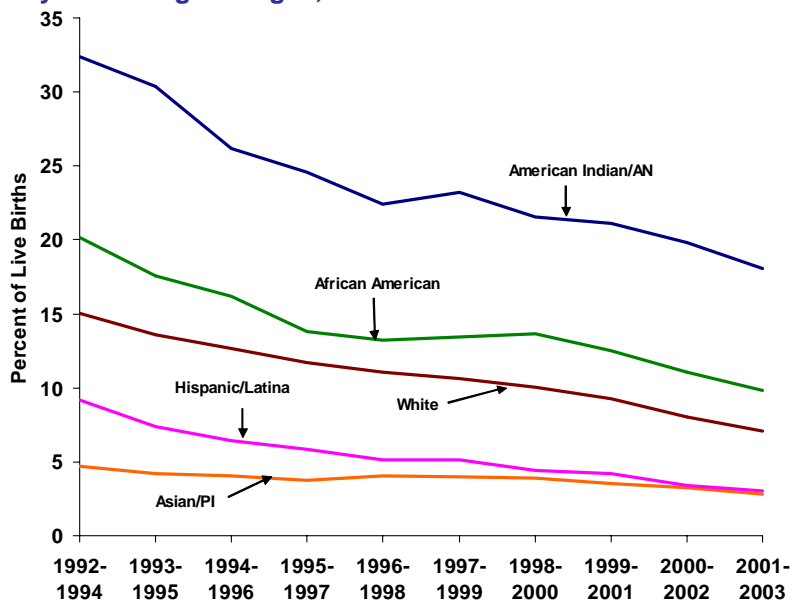


Data Source: Washington State Department of Health, Center for Health Statistics  
Produced by: Epidemiology, Planning & Evaluation, Public Health - Seattle & King County

## Focus on Disparities

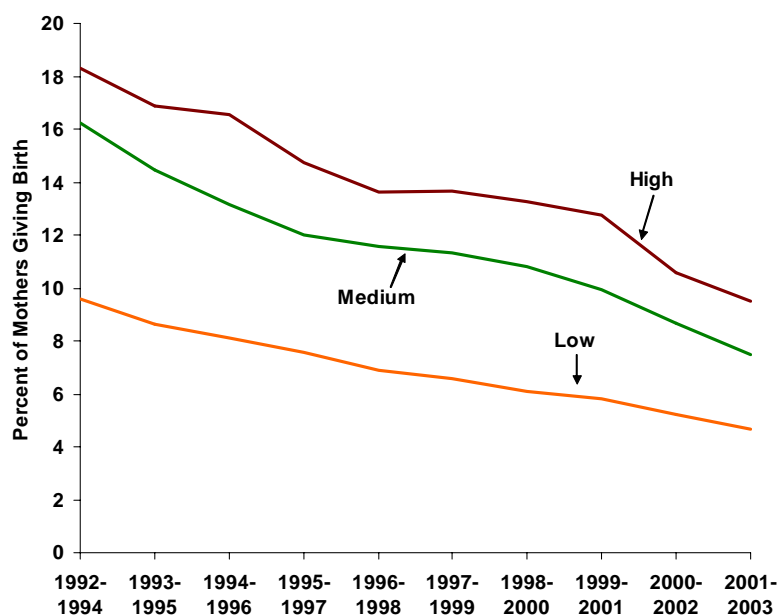
- Maternal smoking rates declined in all race/ethnicity groups between 1994 and 2003. They declined most sharply in Hispanic/Latinas, falling by two-thirds to 3.0% of live births. American Indian/Alaska Natives consistently had the highest rates (18.1% in 2001-2003), while Asian or Pacific Islanders had the lowest (2.9% in 2001-2003).

**Maternal Smoking by Race/Ethnicity, King County, 3-year Rolling Averages, 1992-2003**



Data Source: Washington State Department of Health, Center for Health Statistics  
Produced by: Epidemiology, Planning & Evaluation, Public Health - Seattle & King County

**Maternal Smoking by Neighborhood Poverty Level, King County, 3-year Rolling Averages, 1992-2003**



Data Source: Washington State Department of Health, Center for Health Statistics  
Produced by: Epidemiology, Planning & Evaluation, Public Health - Seattle & King County

- The rates also declined in high-, medium- and low-poverty neighborhoods.

## Resources

- Centers for Disease Control and Prevention (2005): "Maternal and Infant Health: Smoking During Pregnancy," available at <http://www.cdc.gov/reproductivehealth/MaternalInfantHealth/related/SmokingPregnancy.htm>, accessed 1/2006.

# Adolescent Birth

## (births to females 15-17 years of age)

As a group, adolescent mothers (15-17 years) and their children face a future at greater risk of a host of adverse consequences.

Teen mothers are less likely to complete their schooling and more likely to be single parents, thus increasing the chances that they will be poor and dependent as young adults.<sup>1-3</sup> Teen moms are also more likely to have poor birth outcomes compared to mothers 18 and over.

Over the last ten years, the adolescent birth rate in King County has decreased significantly (see [Public Health Core Indicators Seattle and King County](#) for more information).

In comparison to 15 major metropolitan U.S. counties, King County had the lowest rate of adolescent birth (10.1 per 1,000 live births).

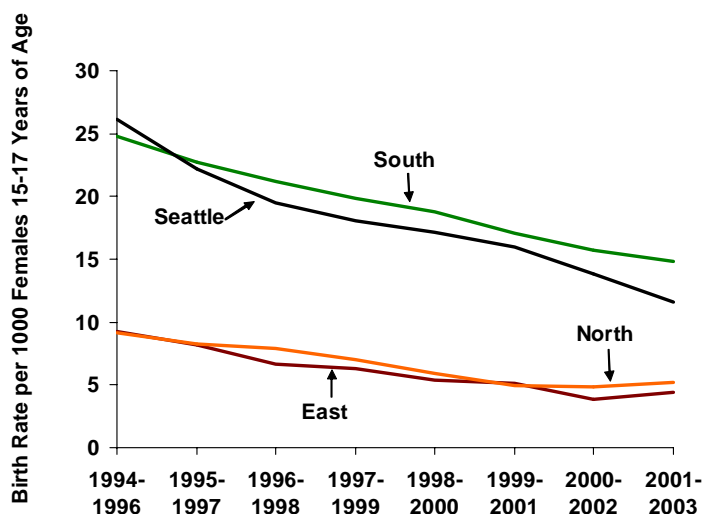
In spite of the dramatic decreases in rates of adolescent birth, significant disparities persist with Latinas/Hispanics, African Americans and American Indian/Alaska Natives having significantly higher rates than whites and Asian/Pacific Islanders.

Disparities persist by level of neighborhood poverty and geographic region and health planning areas within King County with high poverty neighborhoods and South Region and Seattle showing the highest rates (additional information can be viewed in [Adolescent Pregnancy, Birth and Abortion](#)).

## King County and Regions

- From 1994 to 2003, there were significant declines in the rates of adolescent birth in King County.
- The highest rates of adolescent birth were consistently in Seattle and South Region.

**Adolescent Birth Rates by Region, King County, 3-Year Rolling Averages, 1994-2003**

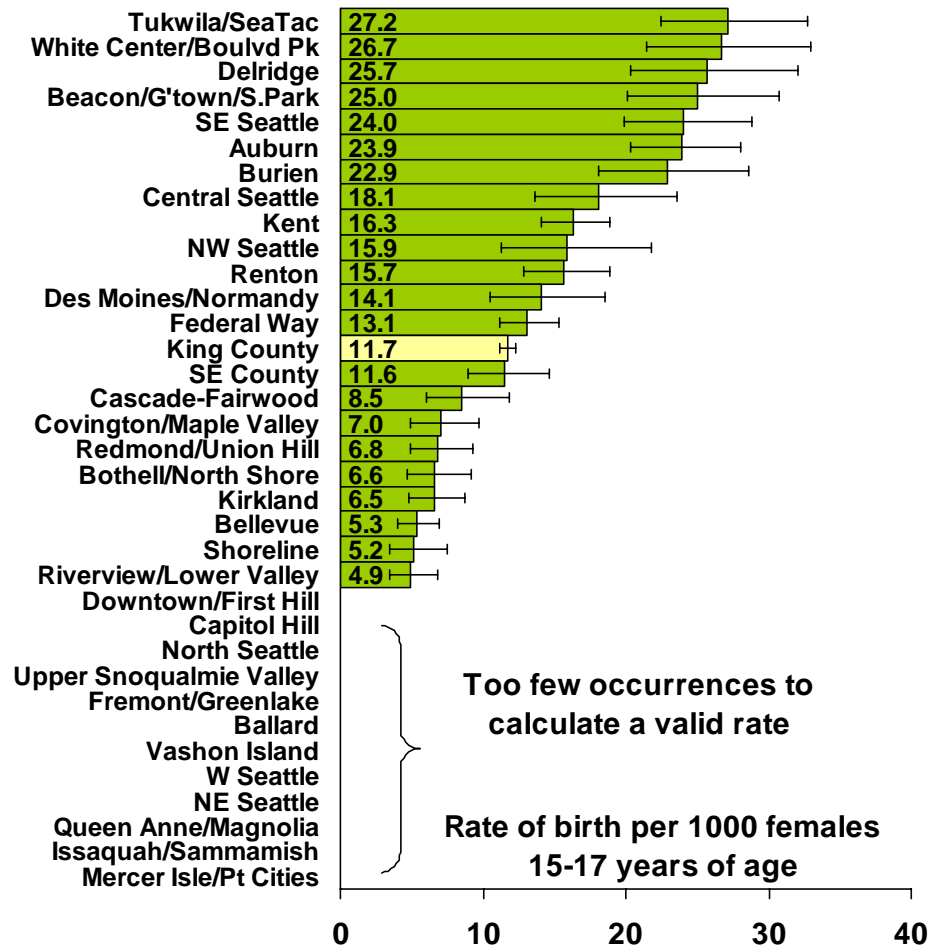


Data Source: Washington State Department of Health, Center for Health Statistics, Birth Certificate Data  
Produced by: Public Health - Seattle & King County, Epidemiology, Planning & Evaluation

## Patterns by Health Planning Area

- Small numbers within the different Health Planning Areas result in overlapping confidence intervals. However, the Tukwila/SeaTac, White Center/Boulevard Park, Delridge, Beacon Hill/Georgetown/South Park, Southeast Seattle, Auburn and Burien Health Planning Areas had the highest rates of adolescent birth in King County.
- The lowest rates of adolescent birth in King County were in the Covington/Maple Valley, Redmond/Union Hill, Bothell/North Shore, Kirkland, Bellevue, Shoreline and Riverview/Lower Valley Health Planning areas.

Adolescent Birth Rate by Health Planning Area, King County, 1999-2003 Combined

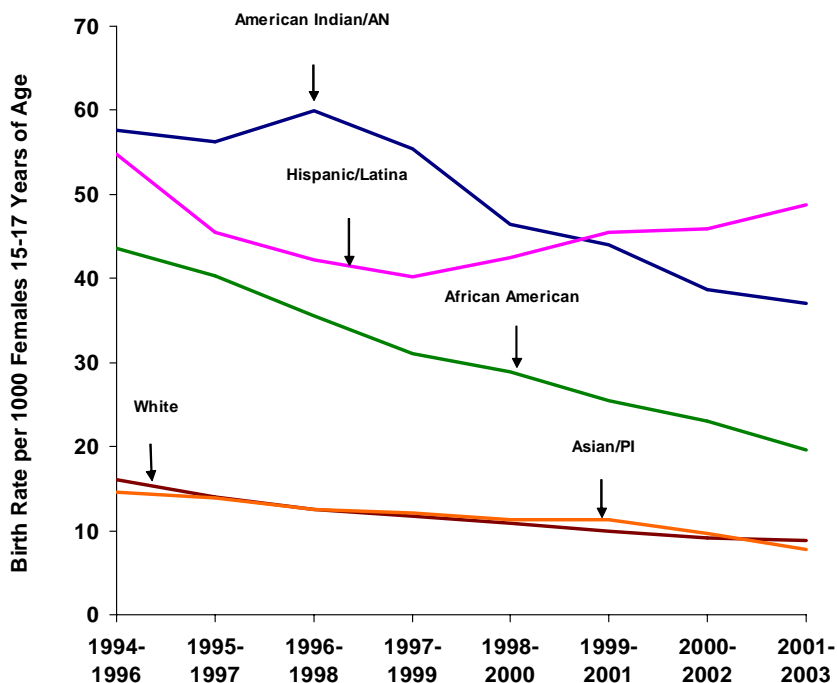


Data Source: Washington State Department of Health, Center for Health

Produced by: Public Health - Seattle & King County, Epidemiology, Planning & Evaluation, Birth Certificate Data



### Adolescent Birth Rates by Race/Ethnicity King County, 3-Year Rolling Averages, 1994-2003



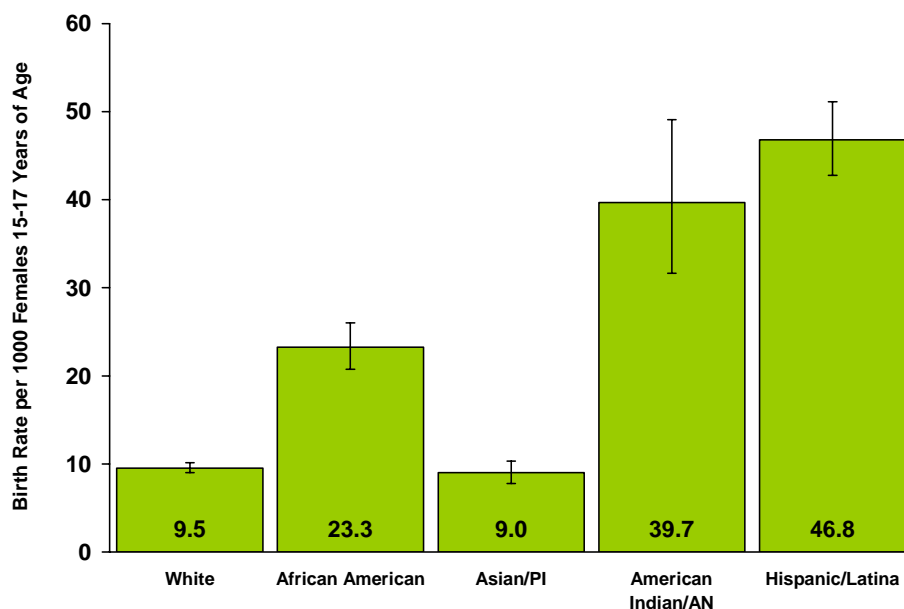
Data Source: Washington State Department of Health, Center for Health Statistics, Birth Certificate Data  
Produced by: Epidemiology, Planning & Evaluation, Public Health - Seattle & King County

### Focus on Disparities

- Over the last decade, from 1994-2003, adolescent birth rates have consistently been significantly higher for African Americans, American Indian/Alaska Natives, and Hispanic/Latinas compared to whites and Asian/Pacific Islanders.
- From 1994-2003, adolescent birth rates decreased significantly for all race/ethnic groups except for Hispanic/Latinas.

- Since 1997-1999, there appears to be an upward trend in adolescent births in Hispanic/Latinas, although this was not statistically significant.
- From 1999-2003, the rate of adolescent birth for Hispanic/Latinas was over four times the rate for whites and Asian/Pacific Islanders. The rate for American Indian/Alaska Natives was nearly four times the rate for whites and Asian/Pacific Islanders. For African Americans the rate of adolescent birth was twice that for whites and Asian/Pacific Islanders.
- From 1994 to 1998, all race/ethnic groups, except for American Indian/Alaska Natives, declined. But from 1998 to 2003, while other groups continued a significant downward trend, Hispanic/Latina rates flattened and went up, although the increase was not significant.

### Adolescent Birth Rates By Race/Ethnicity, King County, 1999 - 2003 Combined



Data Source: Washington State Department of Health, Center for Health Statistics, Birth Certificate Data  
Produced By: Public Health - Seattle & King County, Epidemiology, Planning & Evaluation

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References

- <sup>1</sup> *Whatever Happened to Childhood? The Problem of Teen Pregnancy in the United States*. Washington, DC: National Campaign to Prevent Teen Pregnancy;1997; Maynard RA, Ed. *Kids Having Kids: Economic Costs and Social Consequences of Teen Pregnancy*. Washington, DC: The Urban Institute Press;1997.
- <sup>2</sup> Sawhill IV. Teen pregnancy prevention: Welfare reform's missing component. Brookings Policy Brief38; 1998:1-8. Available at: <http://www.brook.edu/comm/PolicyBriefs/pb038/pb38.htm>.
- <sup>3</sup> Ventura SJ, Martin JA, Curtin SC, Mathews TJ. Births: Final data for 1997. National Vital Statistics Reports. Atlanta, GA: Centers for Disease Control; 1999. Vol. 47, No.18. Available at: [http://www.cdc.gov/nchs/data/nvsr/nvsr47/nvs47\\_18.pdf](http://www.cdc.gov/nchs/data/nvsr/nvsr47/nvs47_18.pdf).

For more information see: <http://www.metrokc.gov/health/datawatch/adolescent-pregnancy.pdf>

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